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MVME761EXT Transition Module Installation and Use

VME761EA/IH1

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Motorola, Inc.
Computer Group
2900 South Diablo Way
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Preface

MVME761EXT Transition Module Installation and Use provides general information, hardware preparation, installation instructions and support information for the MVME761EXT Transition Module and P2 Adapters.

The MVME761EXT-1 Transition Module is used as the interface between the following host VMEmodules and various peripheral devices:

MVME2603-*xxxx*

MVME2604-*xxxx*

MVME3604-*xxxx*

MVME4604-*xxxx*

Cables are supplied with MVME761EXT

This manual is intended for anyone who wants to design OEM systems, supply additional capability to an existing compatible system, or for use in a lab environment for experimental purposes.

A basic knowledge of computers and digital logic is assumed.

To use this manual you should be familiar with the publications listed in *Related Documentation*.

Related Documentation

The Motorola publications listed below are referenced in this document. To purchase manuals not shipped with this product, you can contact Motorola in several ways:

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Document Title	Motorola Publication Number
MVME2600 Single Board Computer Installation and Use	V2600A/IH
MVME3600/4600 Single Board Computer Installation and Use	V36A46A/IH

Note Although not shown in the above list, each Motorola Computer Group manual publication number is suffixed with characters which represent the revision level of the document, such as "/IH2" (the second revision of a manual); a supplement bears the same number as the manual but has a suffix such as "/IHA1" (the first supplement to the manual).

Safety Summary
Safety Depends On You

The following general safety precautions must be observed during all phases of operation, service, and repair of this equipment. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture, and intended use of the equipment. Motorola, Inc. assumes no liability for the customer's failure to comply with these requirements.

The safety precautions listed below represent warnings of certain dangers of which Motorola is aware. You, as the user of the product, should follow these warnings and all other safety precautions necessary for the safe operation of the equipment in your operating environment.

Ground the Instrument.

To minimize shock hazard, the equipment chassis and enclosure must be connected to an electrical ground. The equipment is supplied with a three-conductor ac power cable. The power cable must be plugged into an approved three-contact electrical outlet. The power jack and mating plug of the power cable meet International Electrotechnical Commission (IEC) safety standards.

Do Not Operate in an Explosive Atmosphere.

Do not operate the equipment in the presence of flammable gases or fumes. Operation of any electrical equipment in such an environment constitutes a definite safety hazard.

Keep Away From Live Circuits.

Operating personnel must not remove equipment covers. Only Factory Authorized Service Personnel or other qualified maintenance personnel may remove equipment covers for internal subassembly or component replacement or any internal adjustment. Do not replace components with power cable connected. Under certain conditions, dangerous voltages may exist even with the power cable removed. To avoid injuries, always disconnect power and discharge circuits before touching them.

Do Not Service or Adjust Alone.

Do not attempt internal service or adjustment unless another person capable of rendering first aid and resuscitation is present.

Use Caution When Exposing or Handling the CRT.

Breakage of the Cathode-Ray Tube (CRT) causes a high-velocity scattering of glass fragments (implosion). To prevent CRT implosion, avoid rough handling or jarring of the equipment. Handling of the CRT should be done only by qualified maintenance personnel using approved safety mask and gloves.

Do Not Substitute Parts or Modify Equipment.

Because of the danger of introducing additional hazards, do not install substitute parts or perform any unauthorized modification of the equipment. Contact your local Motorola representative for service and repair to ensure that safety features are maintained.

Dangerous Procedure Warnings.

Warnings, such as the example below, precede potentially dangerous procedures throughout this manual. Instructions contained in the warnings must be followed. You should also employ all other safety precautions which you deem necessary for the operation of the equipment in your operating environment.



Warning

Dangerous voltages, capable of causing death, are present in this equipment.

Use extreme caution when handling, testing, and adjusting.

Warning

This equipment generates, uses, and can radiate electromagnetic energy. It may cause or be susceptible to electromagnetic interference (EMI) if not installed and used in a cabinet with adequate EMI protection.

CE European Notice: Board products with the CE marking comply with the EMC Directive (89/336/EEC). Compliance with this directive implies conformity to the following European Norms:

EN55022 (CISPR 22) Radio Frequency Interference

EN50082-1 (IEC801-2, IEC801-3, IEC801-4) Electromagnetic Immunity

This board product was tested in a representative system to show compliance with the above mentioned requirements. A proper installation in a CE-marked system will maintain the required EMC/safety performance.

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General Information 1

Introduction

This manual provides general information, hardware preparation, and installation instructions, for the MVME761EXT Transition Module and the P2 Adapter board.

Product Overview

The MVME761EXT Transition Module expands the capability of the MVME761 by providing additional standard I/O connections when interfacing between the MVME260*x*, MVME360*x*, or MVME460*x* VMEmodule and various peripheral devices. Typically, the single slot MVME761EXT is installed next to the MVME761. This MVME761EXT module provides industry standard connectors to simplify customer cable requirements for the SCSI, 8/16 bit Single Ended (SE) or Differential (DE), PMC I/O and Ethernets (10M bps and 10/100BaseT) signals. Both the MVME761 and the MVME761EXT interface to the same P2 Adapter connected to the baseboard. The MVME761EXT can also connect to other P2 Adapters.

Features

The features of the MVME761EXT Transition Module include:

- Industry-standard connectors for these interfaces:
  - 10Base-T/100Base-TX Ethernet
  - 10M bps Ethernet (AUI)
- One PMC I/O port
- 8/16 bit single ended or differential SCSI

General Description

The MVME761EXT Transition Module provides the interface between the standard Ethernet, SCSI and PMC I/O connectors, and the following MVME260*x*, MVME360*x*, or MVME460*x* VME modules:

MVME2603-*xxxx*

MVME2604-*xxxx*

MVME3604-*xxxx*

MVME4604-*xxxx*

The MVME761EXT is an I/O transition module designed for Motorola's VME Processor Module, and Single Board Computer (SBC) families of VME processor modules, generically referred to in this manual as MVMExxxx.

The MVME761EXT is used as an interface between the processor module and its peripheral devices. The purpose of this module is to provide rear, industry-standard connectors that simplify external customer cable requirements.

The P2 adapter assembly routes the I/O signals and grounds from the P2 connector on the chassis backplane at the VMEmodule MPU connection to the MVME761EXT.

Cables are supplied for interconnection between MVME761EXT and the P2 adapters.

The MVME761EXT front panel has a SCSI port, PMCIO and two Ethernet ports (10Mbps and 10/100 BaseT).

Figure 1-1 shows the MVME761EXT transition module component layout and the front panel. See Table 1-1 for a list of the front panel port connectors.

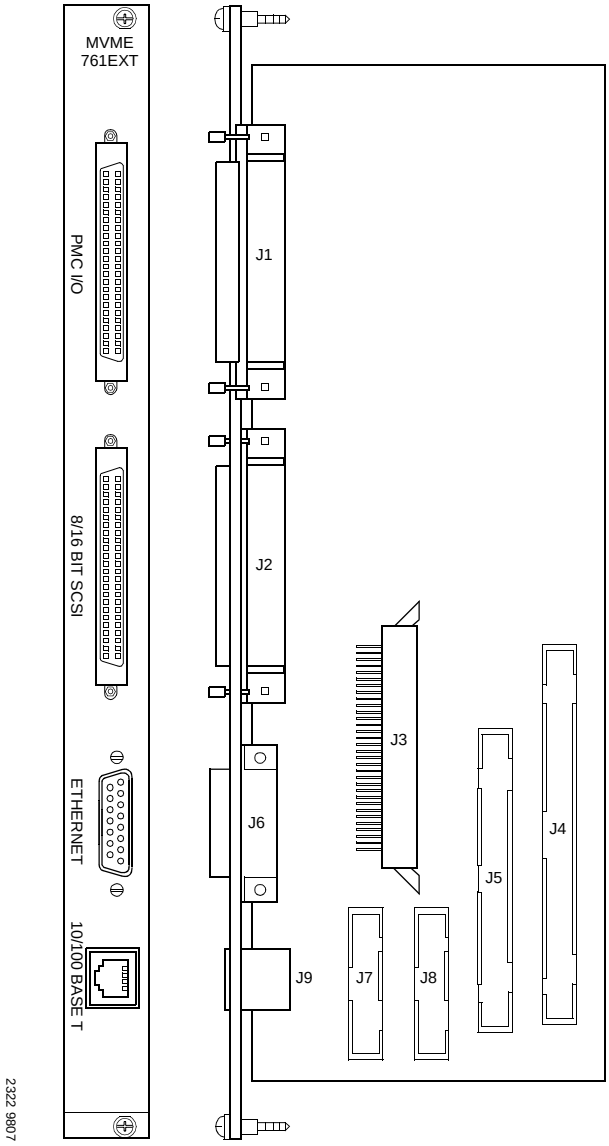


Figure 1-1. MVME761EXT Transition Module Front Panel and Component Side

P2 Adapter Boards

The P2 Adapters route the PMC I/O port, SCSI port, and Ethernet signals to the MVME761EXT transition module.

3-row DIN Backplane P2 Adapters for the MVME761EXT

One of the 3-row P2 adapters for the MVME761EXT is the MVME761P2-001 (part number 01-W3216F01A), that mounts onto a 3-row, 96-pin P2 backplane connector. It has a 50-pin male connector, J2, that carries the 8-bit SCSI signals from the MVME260*x*, MVME360*x*, or MVME460*x*.

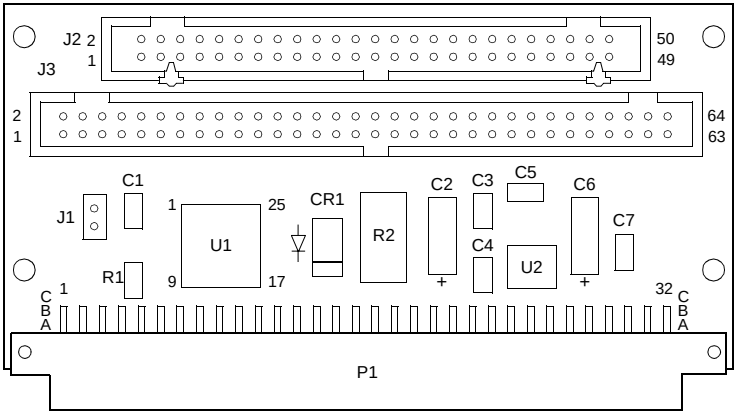


Figure 1-2. 3-row DIN Backplane P2 Adapter (01-W3216F01A)

The other 3-row P2 Adapter for the MVME761EXT is for secondary ethernet and SCSI interface. There are two versions. The one shown in the following figure is an MVME3600P2, (the stock part number is 01-W3203F02C, the other is 01-W3203F01C). It mounts on a 3-row, 92-pin P2 backplane connector. It has a 68-pin female

connector, J11, that carries 16-bit Single Ended or Differential SCSI signals from the MVME360x, or MVME460x. It also has a 20-pin male connector, J10, for 10Mbps or 10/100 BaseT.

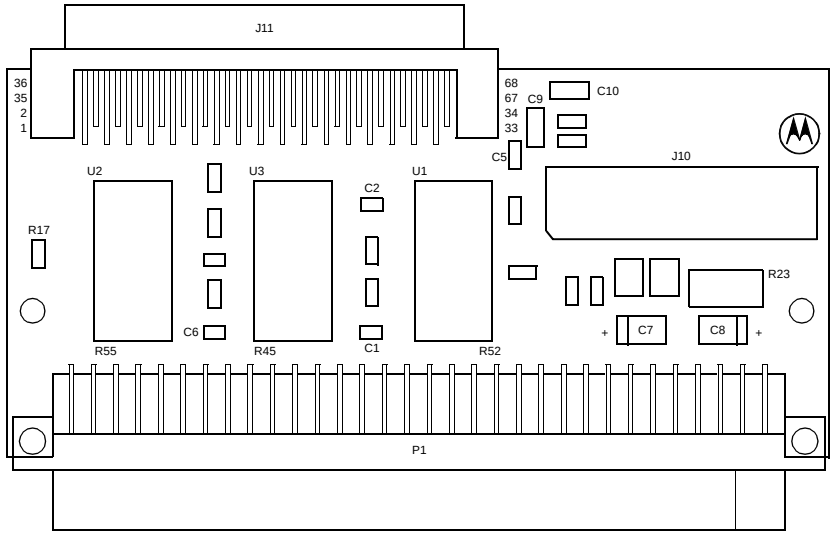


Figure 1-3. 3-row DIN Backplane P2 Adapter (01-W3203F02C)

5-row DIN Backplane P2 Adapter for the MVME761EXT

The 5-row P2 adapter for the MVME761EXT is the MVME761P2-011 (part number 01-W3199F01C), which mounts onto a 5-row, 160-pin P2 backplane connector. It has a 68- pin female connector, J1, that carriers 16-bit SCSI signals from the MVME260*x*, MVME360*x*, or MVME460*x*. It also has a 64-pin male connector, J3, for PMC I/O.

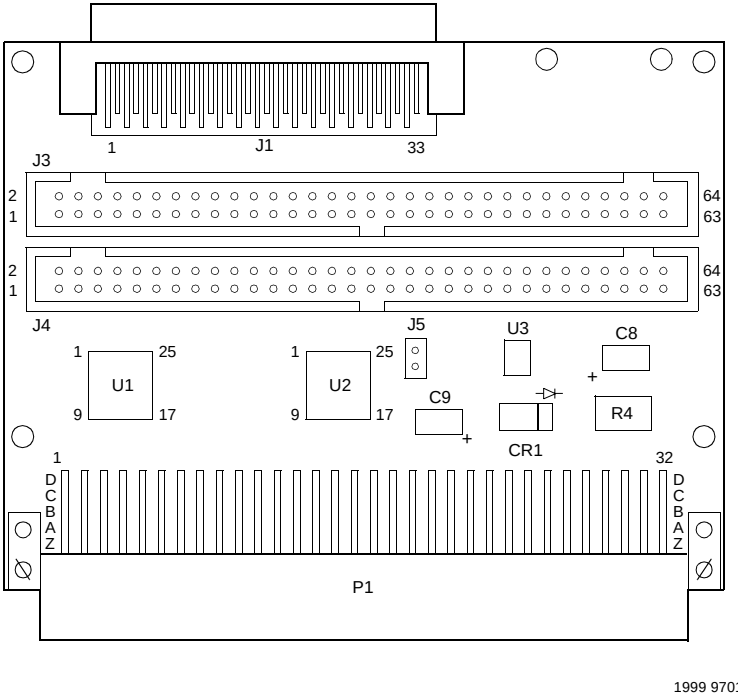


Figure 1-4. 5-row DIN Backplane P2 Adapter (MVME761EXT)

Connectors and Cables

The connectors on the MVME761EXT transition module and the P2 Adapters are listed in Tables 1-1, 1-2, 1-3, and 1-4. See Table 1-5 for a list of the cables. See Chapter 3 for the connector pin assignments.

Table 1-1. MVME761EXT Transition Module Connectors

Type	Number	Description
PMC I/O	J1	68-pin female IDC connector for PMC I/O interfaces
	J4	64-pin male connector for PMC I/O interface between P2 adapter and MVME761EXT
SCSI	J2	68-pin female IDC connector for SCSI interfaces
	J3	68-pin male connector for 8/16 bit SCSI interface between P2 adapter and MVME761EXT
	J5	50-pin male connector for 8 bit SCSI interface between P2 adapter and MVME761EXT
Ethernet - 10Mbps	J6	15-pin female DB-15 connector
	J8	20-pin male connector for 10Mbps interface between P2 adapter and MVME761EXT
Ethernet - 10/100BaseT	J9	8-pin female RJ-45 Ethernet port connector
	J7	20-pin male connector for 10/100BaseT interface between P2 adapter and MVME761EXT

Table 1-2. 3-Row DIN Backplane P2 Adapter Connectors (MVME761EXT)

Type	Number	Description (01-W3216F01A)
VME	P1	96-pin female DIN 41612 connector to the chassis backplane
	J3	64-pin male connector for output to the connector on the MVME761 transition module (labeled P2)
SCSI	J2	50-pin male IDC connector for internal SCSI devices or output to J5 on the MVME761EXT transition module.

Table 1-3. 3-Row DIN Backplane P2 Adapter Connectors (MVME761EXT)

Type	Number	Description (01-W3203F0XC)
VME	P1	96-pin female DIN 41612 connector to the chassis backplane
Ethernet	J10	20-pin male connector for Ethernet output to J7 for 10/100 BaseT or J8 for 10Mbps on the MVME761EXT module
SCSI	J11	68-pin female IDC connector for Single Ended or Differential SCSI devices or output to J3 on the MVME761EXT module.

Table 1-4. 5-Row DIN Backplane P2 Adapter Connectors (MVME761EXT)

Type	Number	Description (01-W3203F0XC)
VME	P1	160-pin female DIN 41612 connector to the chassis backplane
	J4	64-pin male connector for output to the connector on the MVME761 transition module (labeled P2)
PMC I/O	J3	64-pin male connector for PMC I/O or output to J4 on the MVME761EXT module
SCSI	J1	68-pin female IDC connector for Single Ended or Differential SCSI devices or output to J3 on the MVME761EXT module.

Table 1-5. MVME761EXT Transition Module Cables

Part Number	Description
30-W2584C03A (PMC I/O cable)	64-line flat ribbon cable with 64-pin female connectors that connects J4 on the MVME761EXT transition module to J3 on the 5-row P2 adapter; 18 inches long cable supplied with the MVME761EXT
30-W2364E01A (8/16-bit SCSI cable)	68-line flat ribbon cable with 68-pin female connector and 68-pin DIN connector that connects J3 on the MVME761EXT transition module to J11 on the 3-row P2 adapter (01-W3203F0XC) or J1 on the 5-row P2 adapter (01-3199F01A); 18 inches long cable supplied with the MVME761EXT
30-W2365E01A (Ethernet cable)	20-line flat ribbon cable with 20-pin female connectors that connects J7 for 10/100 BaseT or J8 for 10Mbps on the MVME761EXT transition module to J10 on the 3-row P2 adapter (01-W3203F0XC); 18 inches long cable supplied with the MVME761EXT
30-W2960B01A (8-bit SCSI cable)	50-line flat ribbon cable with 50-pin female connectors that connects J5 on the MVME761EXT transition module to J2 on the 3-row P2 adapter (01-W3216F01A); 17.5 inches long cable supplied with the MVME761EXT.

Specifications

The MVME761EXT transition module specifications are shown in Table 1-6.

Table 1-6. MVME761EXT Specifications

Characteristics	Specifications
Operating temperature	0^{o} to 55^{o} C at chassis point of entry of forced air (approximately 5 CFM)
Storage temperature	-40^{o} to $+85^{o}$ C
Relative Humidity	5% to 90% (non-condensing)
Board Size (excluding front panel)	Height: 9.187 inches(233.35 mm) Height: 3.200 inches(80.00 mm) Thickness: 0.063 inches (1.60 mm)

Cooling Requirements

Since no active components exist on the MVME761EXT, there are no direct cooling requirements associated with this board.

EMC Compliance

The MVME761EXT was tested in an EMC-compliant chassis, and meets the requirements for CE and Class A equipment. For minimum RF emissions, it is essential that you implement the following conditions:

- Install shielded cables on all external I/O ports
- Connect conductive chassis rails to earth ground to provide a path for connecting shields to earth ground
- Tighten all front panel screws

Hardware Preparation and Installation

2

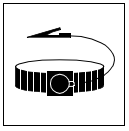
Introduction

This chapter provides unpacking instructions, hardware preparation, and installation instructions for the MVME761EXT transition module, and the P2 Adapter.

Note The illustrations in this document show connections to the P2 Adapter from the MVME761EXT only. For those connections from the MVME761 to the P2 refer to the VME761A/IH manual, or to the specific baseboard document.

Unpacking the Hardware

Use ESD



Wrist Strap

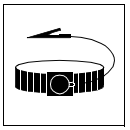
The MVME761EXT is packed in an anti-static wrapper to protect it from static discharge. Motorola strongly recommends that you use an antistatic wrist strap and a conductive foam pad when handling the equipment. Electronic components can be extremely sensitive to electro-static discharge (ESD). After removing the board from the protective wrapper, place it component side up on a grounded, static-free surface. Do not slide the board over any surface.

Refer to the packing list and verify that all items are present. Save the packing material for storing and reshipping of the equipment.

2

Installing the Transition Module and P2 Adapter

Use ESD



Wrist Strap

Motorola strongly recommends that you use an antistatic wrist strap and a conductive foam pad when installing boards in a system chassis. Electronic components, such as disk drives, computer boards, and memory modules, can be extremely sensitive to ESD. Place the board flat on a grounded, static-free surface, component-side up. Do not slide the board over any surface.

If an ESD station is not available, you can avoid damage resulting from ESD by attaching the ESD wrist strap to an unpainted metal part of the system chassis.

Install the MVME761EXT in the system chassis per the following procedure (refer to Figure 2-1 for making an 8-bit SCSI connection, or to subsequent figures for other types of connections), which shows the cabling and connections within the chassis).

Caution

The SCSI connection on the MVME761EXT can only install either to J5 or J3, but not both at the same time.

Caution

Connecting modules while power is applied may result in damage to components on the module.

Warning

Dangerous voltages, capable of causing death, are present in this equipment. use extreme caution when handling, testing, and adjusting.

MVME761EXT Connection Options

The following procedures describe various rear I/O connection options available with the MVME761EXT. These connections may or may not be used in conjunction with other front I/O connections used on the baseboard, or processor board. The I/O connections described here are only those connections that apply to rear I/O connections available from the baseboard or processor board through the MVME761EXT. For other I/O options refer to the baseboard and MVME761 Transition Module Installation Guides. The following I/O configurations are currently available with the MVME761EXT:

- Connection to an 8-bit SCSI interface
- Connection to an 8/16-bit Single Ended SCSI interface
- Connection to a PMC I/O interface
- Connection to an 8/16-bit Single Ended or Differential SCSI interface
- Connection to a 10Mbps Ethernet interface
- Connection to a 10/100 BaseT interface

Select the appropriate procedure and make the connection in the order described.

Connecting to an 8-Bit SCSI Interface

Connection to an 8-bit SCSI interface is done from the baseboard through the P2 Adapter to the MVME761EXT.

1. Turn all equipment power OFF and disconnect the power cable from the AC power source.
2. Remove the chassis cover per the instructions in the equipment user's manual.
3. If the chassis has a rear card cage, remove the filler panel(s) from the appropriate card slot(s) at the rear of the chassis.
4. If necessary, move some of the other modules to allow space for the cables connected to the P2 Adapter and the transition module (Refer to Figure 1-2).
5. Install the jumper on header J1 (this jumper enables active SCSI termination) of the 3-row P2 Adapter, part number 01-W3216F01A, if you are supporting SCSI devices (Refer to Figure 1-2).
6. Attach the P2 Adapter (part number 01-W3216F01A for the 3-row version) to the backplane connector that is directly in line with the P2 connector on the MVME260*x* or MVME360*x*/MVME460x baseboard.

Note Be sure to orient pin 1 of the P2 Adapter's connector with pin 1 of the backplane connector.

7. Attach the 50-conductor cable (part number 30-W2960B01A) to the P2 Adapter (J2). Be sure to orient cable pin 1 with connector pin 1.
8. Attach the 50-conductor cable to connector J5 on the MVME761EXT transition module.
9. Insert the transition module into the chassis slot, and tighten the attaching screws.

Note Make sure there is good contact with the transverse mounting rails in order to minimize RF emissions.

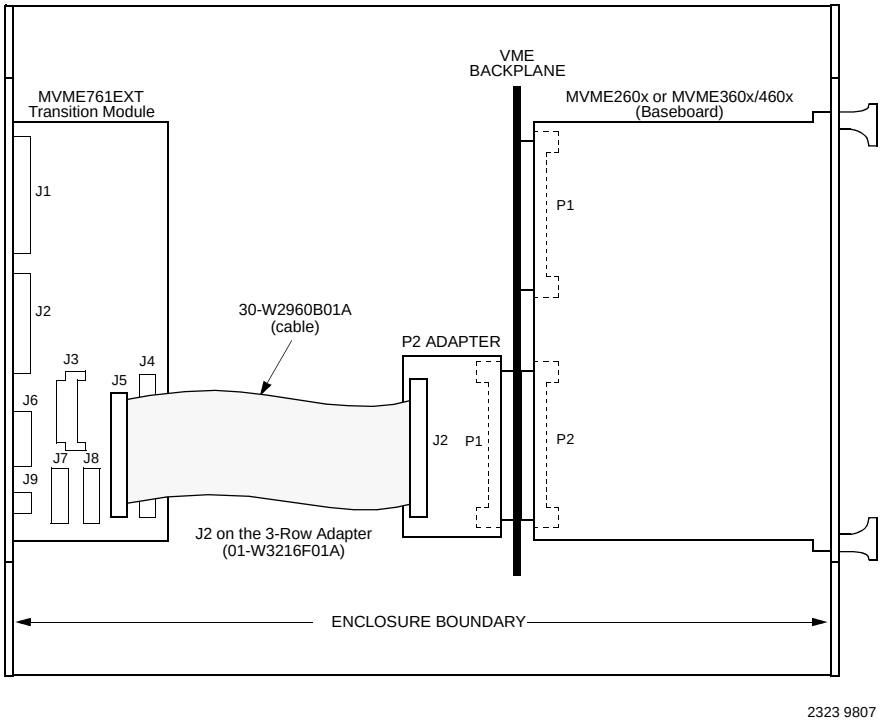


Figure 2-1. MVME761EXT 8-bit SCSI Connection

10. Install the chassis cover.

Note Make sure that cables are not pinched by the cover.

11. Connect the power cable to the AC power source.

Connecting to an 8/16 Bit Single Ended SCSI Interface

Connection to an 8/16-bit Single Ended SCSI interface is done from the baseboard through the P2 Adapter to the MVME761EXT.

1. Turn all equipment power OFF and disconnect the power cable from the AC power source.
2. Remove the chassis cover per the instructions in the equipment user's manual.
3. If the chassis has a rear card cage, remove the filler panel(s) from the appropriate card slot(s) at the rear of the chassis.
4. If necessary, move some of the other modules to allow space for the cables connected to the P2 Adapter and the transition module.
5. Install the jumper J1 (this jumper enables active SCSI termination) on the header of the 5-row P2 Adapter, part number 01-W3199F01A, if you are supporting SCSI devices.
6. Attach the P2 Adapter (part number 01-W3199F01A for the 5-row version) to the backplane connector that directly in line with the P2 connector on the MVME260x, or MVME360x/MVME460x baseboard.

Note Be sure to orient pin 1 of the P2 Adapter connector with pin 1 of the backplane connector.

7. Attach the 68 conductor cable (part number 30-W2364E01A) to the P2 Adapter (J1). Be sure to orient cable pin 1 with connector pin 1.
8. Attach the 68 conductor cable to connector J3 on the MVME761EXT transition module.

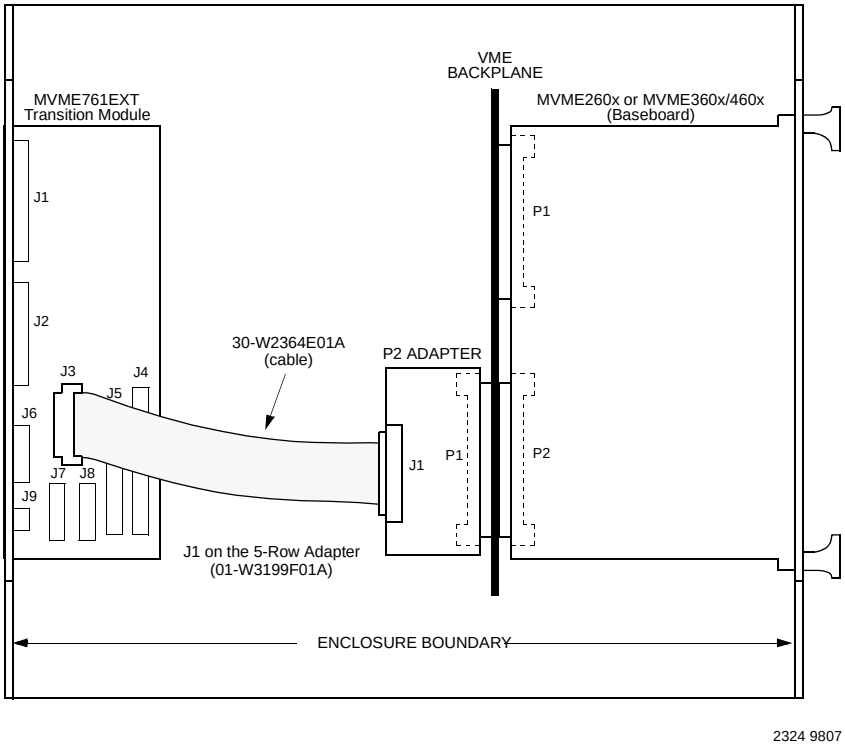


Figure 2-2. MVME761EXT 8/16 bit Single Ended SCSI Connection

9. Insert the transition module into the chassis slot and tighten the attaching screws.

Note Make sure there is good contact with the transverse mounting rails in order to minimize RF emissions.

10. Install the chassis cover.

Note Make sure that cables are not pinched by the cover.

11. Connect the power cable to the AC power source.

Connecting to a PMC I/O Interface

Connection to a PMC I/O interface is done from the baseboard through the P2 Adapter to the MVME761EXT.

1. Turn all equipment power OFF and disconnect the power cable from the AC power source.
2. Remove the chassis cover per the instructions in the equipment user's manual.
3. If the chassis has a rear card cage, remove the filler panel(s) from the appropriate card slot(s) at the rear of the chassis.
4. If necessary, move some of the other modules to allow space for the cables connected to the P2 Adapter and the transition module.
5. Install the jumper on header J1 (this jumper enables active SCSI termination) (on the 3-row P2 Adapter or header J5 on the 5-row P2 Adapter) if you are supporting SCSI devices.
6. Attach the P2 adapter (part number 01-W3199F01A for the 5-row version) to the backplane connector that is directly in line with the P2 connector on the MVME260x, or MVME360x/MVME460x baseboard.

Note Be sure to orient pin 1 of the P2 adapter's connector with pin 1 of the backplane connector.

7. Attach the 64 conductor cable (part number 30-W2564C03A) to the P2 adapter (J3). Be sure to orient cable pin 1 with connector pin 1.
8. Attach the 64 conductor cable to connector J4 on the MVME761EXT transition module.

9. Insert the transition module into the chassis slot and tighten the attaching screws.

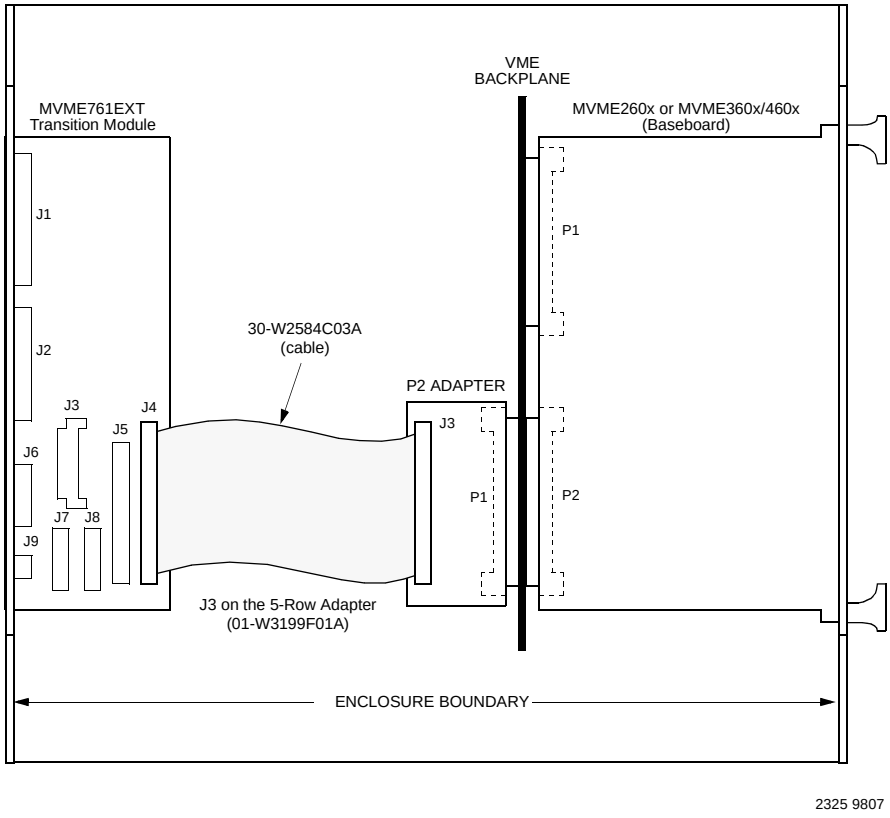


Figure 2-3. MVME761EXT PMC I/O Connector

Note Make sure there is good contact with the transverse mounting rails in order to minimize RF emissions.

10. Install the chassis cover.

Note Make sure the cables are not pinched by the cover.

11. Connect the power cable to the AC power source.

Connecting to an 8/16 Bit Single Ended or Differential SCSI Interface

Connection to an 8/16-bit Single Ended (part number 01-W3203F01C) or Differential (part number 01-W3203F02C) SCSI interface is done from the processor module through the P2 Adapter to the MVME761EXT.

1. Turn all equipment power OFF and disconnect the power cable from the AC power source.
2. Remove the chassis cover per the instructions in the equipment user's manual.
3. If the chassis has a rear card cage, remove the filler panel(s) from the appropriate card slot(s) at the rear of the chassis.
4. If necessary, move some of the other modules to allow space for the cables connected to the P2 Adapter and the transition module.
5. Attach the P2 Adapter (part number 01-W3203F0XC for the 3-row version) to the backplane connector that is directly in line with the P2 connector on the MVME360x/MVME460x processor module.

Note Be sure to orient pin 1 of the P2 Adapter's connector with pin 1 of the backplane connector.

6. Attach the 68 conductor cable (part number 30-W2364E01A) to J11 on the P2 Adapter. Be sure to orient cable pin 1 with connector pin 1.

7. Attach the 68 conductor cable to connector J3 on the MVME761EXT transition module.
8. Insert the transition module into the chassis slot and tighten the attaching screws.

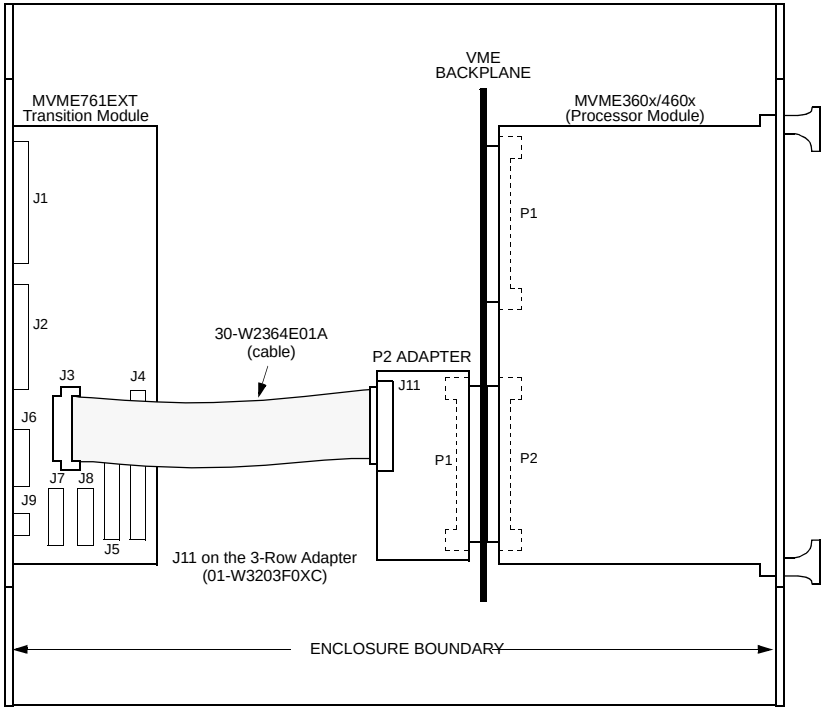


Figure 2-4. MVME761EXT - 8/16 bit Single Ended or Differential SCSI Connection

Note Make sure there is good contact with the transverse mounting rails in order to minimize RF emissions.

9. Install the chassis cover.

Note Make sure that cables are not pinched by the cover.

10. Connect the power cable to the AC power source.

Connecting to a 10Mbps Ethernet Interface

Connection to a 10Mbps Ethernet interface is done from the processor module through the P2 Adapter to the MVME761EXT.

1. Turn all equipment power OFF and disconnect the power cable from the AC power source.
2. Remove the chassis cover per the instructions in the equipment user's manual.
3. If the chassis has a rear card cage, remove the filler panel(s) from the appropriate card slot(s) at the rear of the chassis.
4. If necessary, move some of the other modules to allow space for the cables connected to the P2 Adapter and the transition module.
5. Attach the P2 Adapter (part number 01-W3203F0XC for the 3-row version) to the backplane connector that is directly in line with the P2 connector on the MVME360x processor module.

Note Be sure to orient pin 1 of the P2 Adapter connector with pin 1 of the backplane connector.

6. Attach the 20 conductor cable (part number 30-W2365E01A) to J10 on the P2 Adapter. Be sure to orient cable pin 1 with connector pin 1.
7. Attach the 20 conductor cable to connector J8 on the MVME761EXT transition module.
8. Insert the transition module into the chassis slot and tighten the attaching screws.

Note Make sure there is good contact with the transverse mounting rails in order to minimize RF emissions.

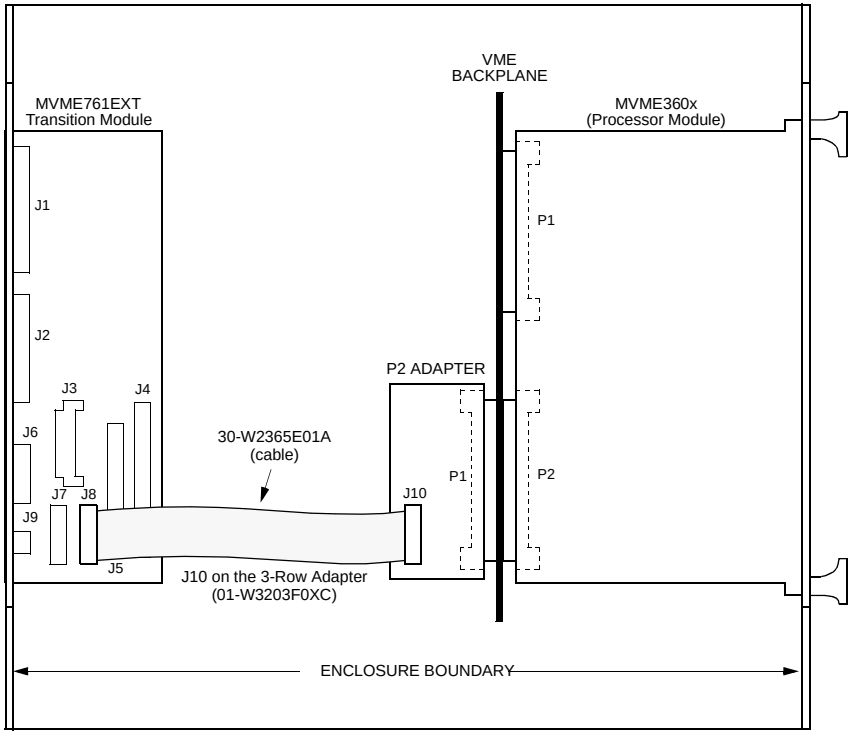


Figure 2-5. MVME761EXT 10Mbps Ethernet Connection

9. Install the chassis cover.

Note Make sure that cables are not pinched by the cover.

10. Connect the power cable to the AC power source.

Connecting to a 10/100 Base T Interface

Connection to a 10/100 BaseT interface is done from the processor module through the P2 Adapter to the MVME761EXT.

1. Turn all equipment power OFF and disconnect the power cable from the AC power source.
2. Remove the chassis cover per the instructions in the equipment user's manual.
3. If the chassis has a rear card cage, remove the filler panel(s) from the appropriate card slot(s) at the rear of the chassis.
4. If necessary, move some of the other modules to allow space for the cables connected to the P2 Adapter and the transition module.
5. Attach the P2 Adapter (part number 01-W3203F0XC for the 3-row version) to the backplane connector that is directly in line with the P2 connector on the MVME460x processor module.

Note Be sure to orient pin 1 of the P2 Adapter connector with pin 1 of the backplane connector.

6. Attach the 20 conductor cable (part number 30-W2365E01A) to J10 on the P2 Adapter. Be sure to orient cable pin 1 with connector pin 1.
7. Attach the 20 conductor cable to connector J7 on the MVME761EXT transition module.
8. Insert the transition module into the chassis slot and tighten the attaching screws.

Note Make sure there is good contact with the transverse mounting rails in order to minimize RF emissions.

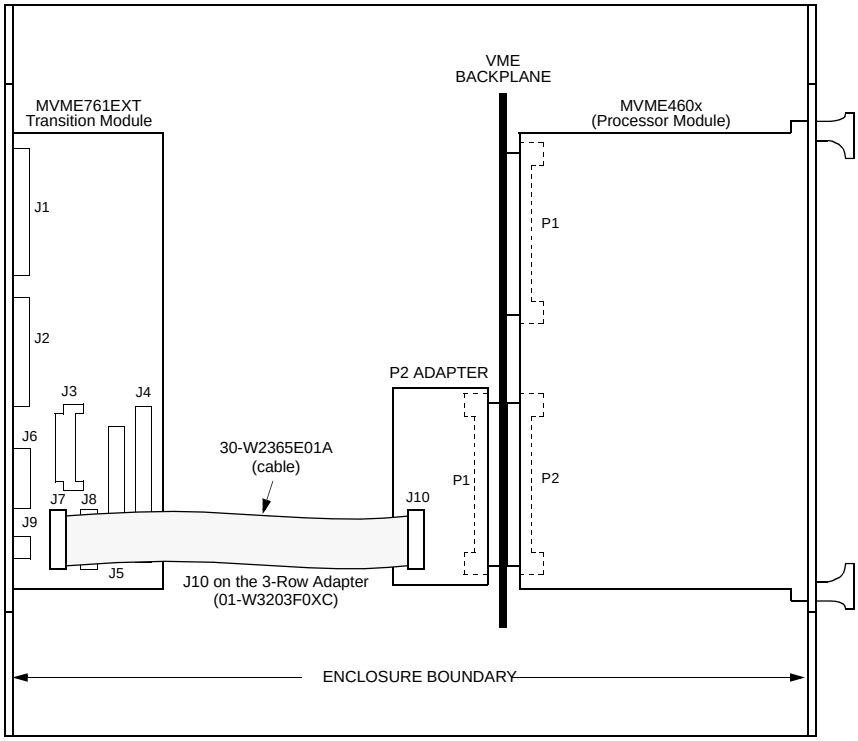


Figure 2-6. MVME761EXT 10/100 BaseT Connection

9. Install the chassis cover.

Note Make sure that cables are not pinched by the cover.

10. Connect the power cable to the AC power source.

Connector Pin Assignments

3

Introduction

This chapter provides the pin assignments for the front panel port connectors on the MVME761EXT transition module, as well as for the SCSI, Ethernet, and PMC I/O connectors on the P2 adapters.

MVME761EXT Transition Module Connectors

PMC I/O Connector

The PMC I/O interface is a 68-pin female connector, J1. The pin assignments and signal mnemonics for this connector are listed in Table 3-1.

Table 3-1. PMC I/O Connector Pin Assignments

Pin	Signal	Pin	Signal
1	GND	35	PMCIO0
2	GND	36	PMCIO1
3	GND	37	PMCIO2
4	GND	38	PMCIO3
5	GND	39	PMCIO4
6	GND	40	PMCIO5
7	GND	41	PMCIO6
8	GND	42	PMCIO7
9	GND	43	PMCIO8
10	GND	44	PMCIO9
11	GND	45	PMCIO10
12	GND	46	PMCIO11
13	GND	47	PMCIO12
14	GND	48	PMCIO13
15	GND	49	PMCIO14
16	GND	50	PMCIO15
17	GND	51	PMCIO16
18	GND	52	PMCIO17
19	GND	53	PMCIO18
20	GND	54	PMCIO19
21	GND	55	PMCIO20
22	GND	56	PMCIO21
23	GND	57	PMCIO22
24	GND	58	PMCIO23
25	GND	59	PMCIO24

Table 3-1. PMC I/O Connector Pin Assignments (Continued)

Pin	Signal	Pin	Signal
26	GND	60	PMCIO25
27	GND	61	PMCIO26
28	GND	62	PMCIO27
29	GND	63	PMCIO28
30	GND	64	PMCIO29
31	GND	65	PMCIO30
32	GND	66	PMCIO31
33	N/C	67	N/C
34	N/C	68	N/C

SCSI Connector

The 8/16 bit single-ended or Differential SCSI interface is a 68-pin connector, J2. The pin assignments and signal mnemonics for this connector are listed in Table 3-2.

Table 3-2: 8/16 bit Single-Ended or Differential SCSI pin Assignments

Pin	Signal	Pin	Signal
1	DB12_P	35	DB12_N
2	DB13_P	36	DBB_N
3	DB14_P	37	DB14_N
4	DB15_P	38	DBIJ_P
5	DBP1_P	39	PBP1_N
6	GND	40	SCSI_P40
7	SCSI_P7	41	SCSI_P41
8	SCSI_P8	42	SCSI_P42
9	SCSI_P9	43	SCSI_P43
10	SCSI_P10	44	SCSI_P44
11	SCSI_P11	45	SCSI_P45
12	SCSI_P12	46	SCSI_P46
13	SCSI_P13	47	SCSI_P47
14	SCSI_P14	48	SCSI_P48
15	SCSI_P15	49	SCSI_P49
16	SCSI_P16	50	GND
17	TERMPOWER	51	TERMPOWER
18	TERMPOWER	52	TERMPOWER
19	N/C	53	N/C
20	SCSI-P20	54	SCSI_P54

Table 3-2: 8/16 bit Single-Ended or Differential SCSI pin Assignments

Pin	Signal	Pin	Signal
21	GND	55	SCSI_P55
22	SCSI_P22	56	SCSI_P56
23	SCSI_P23	57	SCSI_P57
24	SCSI_P24	58	SCSI_P58
25	SCSI_P25	59	SCSI_P59
26	SCSI_P26	60	SCSI_P60
27	SCSI_P27	61	SCSI_P61
28	SCSI_P28	62	SCSI_P62
29	SCSI_P29	63	SCSI_P63
30	GND	64	SCSI_P64
31	DB8_P	65	DB8_N
32	DB9_P	66	DB9_N
33	DB10_P	67	DB10_N
34	DB11_P	68	DB11_N

10Mbps Ethernet Connector

The 10Mbps Ethernet interface is a 15 pin female connector, J6. The connector shield is tied to chassis ground. The pin assignments and signal mnemonics for this connector are listed in Table 3-3.

Table 3-3. 10Mbps Ethernet Pin Assignments

Pin	Signal
1	GND
2	C+
3	T+
4	GND
5	R+
6	GND
7	N/C
8	GND
9	C-
10	T-
11	GND
12	R-
13	+12VF
14	GND
15	N/C

10/100 BaseT Connector

The 10/100BaseT Ethernet interface is a RJ-45 connector, J9. The connector shield is tied to chassis ground. The pin assignments and signal mnemonics for this connector are listed in Table 3-4.

Table 3-4. 10/100BaseT Pin Assignments

Pin	Signal
1	TD+
2	TD-
3	RD+
4	Terminated
5	Terminated
6	RD-
7	Terminated
8	Terminated

P2 Adapter Connectors

8-Bit SCSI Connector (3-Row P2 Adapter - part # 01-W3216F01A)

The 8-bit SCSI connector on the 3-row DIN backplane P2 Adapter is a 50-pin connector, J2. The pin assignments and signal mnemonics for this connector are listed in Table 3-5.

Table 3-5. 8-bit SCSI Connector (3-Row P2 Adapter)

Pin	Signal	Signal	Pin
1	GND	TERMPWR	26
2	SDB0	GND	27
3	GND	GND	28
4	SDB1	GND	29
5	GND	GND	30
6	SDB2	GND	31
7	GND	ATN	32
8	SDB3	GND	33
9	GND	GND	34
10	SDB4	GND	35
11	GND	BSY	36
12	SDB5	GND	37
13	GND	ACK	38
14	SDB6	GND	39
15	GND	RST	40
16	SDB7	GND	41
17	GND	MSG	42
18	DBP	GND	43

Table 3-5. 8-bit SCSI Connector (3-Row P2 Adapter) (Continued)

Pin	Signal	Signal	Pin
19	GND	SEL	44
20	GND	GND	45
21	GND	D/C	46
22	GND	GND	47
23	GND	REQ	48
24	GND	GND	49
25	No Connect	O/I	50

SCSI Connector (3-Row P2 Adapter - Part # 01-W3203F02C)

The 8/16-bit Differential SCSI interface on the 3-row DIN backplane P2 Adapter is a 68-pin connector, J11. The pin assignments and signal mnemonics for this connector are listed in Table 3-6.

Table 3-6. 8/16-bit Differential SCSI Pin Assignments

Pin	Signal	Signal	Pin
1	DB12_P	DB12_N	35
2	DB13_P	DB13_N	36
3	DB14_P	DB14_N	37
4	DB15_P	DB15_N	38
5	DBP1_P	DBP1_N	39
6	GND	SCSI_P40	40
7	SCSI_P7	SCSI_P41	41
8	SCSI_P8	SCSI_P42	42
9	SCSI_P9	SCSI_P43	43
10	SCSI_P10	SCSI_P44	44
11	SCSI_P11	SCSI_P45	45
12	SCSI_P12	SCSI_P46	46
13	SCSI_P13	SCSI_P47	47
14	SCSI_P14	SCSI_P48	48
15	SCSI_P15	SCSI_P49	49
16	SCSI_P16	GND	50
17	TERMPWR	TERMPWR	51
18	TERMPWR	TERMPWR	52
19	No Connect	No Connect	53
20	SCSI_P20	SCSI_P54	54

Table 3-6. 8/16-bit Differential SCSI Pin Assignments (Continued)

Pin	Signal	Signal	Pin
21	GND	SCSI_P55	55
22	SCSI_P22	SCSI_P56	56
23	SCSI_P23	SCSI_P57	57
24	SCSI_P24	SCSI_P58	58
25	SCSI_P25	SCSI_P59	59
26	SCSI_P26	SCSI_P60	60
27	SCSI_P27	SCSI_P61	61
28	SCSI_P28	SCSI_P62	62
29	SCSI_P29	SCSI_P63	63
30	GND	SCSI_P64	64
31	DB8_P	DB8_N	65
32	DB9_P	DB9_N	66
33	DB10_P	DB10_N	67
34	DB11_P	DB11_N	68

SCSI Connector (3-Row P2 Adapter - Part # 01-W3203F01C)

The 8/16-bit SCSI connector on the 3-row DIN backplane P2 Adapter is a 68-pin connector, J11. The pin assignments and signal mnemonics for this connector are listed in Table 3-7.

Table 3-7: 16-bit SCSI Connector (3-row P2 Adapter)

Pin	Signal	Signal	Pin
1	GND	SDB12	35
2	GND	SDB13	36
3	GND	SDB14	37
4	GND	SDB15	38
5	GND	DBP1	39
6	GND	SDB0	40
7	GND	SDB1	41
8	GND	SDB2	42
9	GND	SDB3	43
10	GND	SDB4	44
11	GND	SDB5	45
12	GND	SDB6	46
13	GND	SDB7	47
14	GND	DBP0	48
15	GND	GND	49
16	GND	GND	50
17	TERMPWR	TERMPWR	51
18	TERMPWR	TERMPWR	52
19	No Connect	No Connect	53
20	GND	GND	54

Table 3-7: 16-bit SCSI Connector (3-row P2 Adapter)

Pin	Signal	Signal	Pin
21	GND	ATN	55
22	GND	GND	56
23	GND	BSY	57
24	GND	ACK	58
25	GND	RST	59
26	GND	MSG	60
27	GND	SEL	61
28	GND	D/C	62
29	GND	REQ	63
30	GND	O/I	64
31	GND	SDB8	65
32	GND	SDB9	66
33	GND	SDB10	67
34	GND	SDB11	68

Ethernet Connector (3-Row P2 Adapter - Part # 01-W3203F0XC)

The 10Mbps or 10/100 BaseT Ethernet connector on the 3-Row DIN backplane P2 Adapter is a 20-pin female connector, J10. The pin assignments and signal mnemonics for this connector are listed in Table 3-8.

Table 3-8. Ethernet Connector (3-Row P2 Adapter)

Pin	Signal
1	GND
2	C-
3	C+
4	T-
5	T+
6	GND
7	GND
8	R-
9	R+
10	+12VF
11	GND
12	R+
13	N/C
14	N/C
15	GND
16	N/C

Table 3-8. Ethernet Connector (3-Row P2 Adapter)

Pin	Signal
17	N / C
18	N / C
19	N / C
20	N / C

16-bit SCSI Connector (5-Row P2 Adapter - Part # 01-W3199F01A)

The 16-bit SCSI connector on the 5-row DIN backplane P2 Adapter is a 68-pin connector, J1. The pin assignments and signal mnemonics for this connector are listed in Table 3-9.

Table 3-9: 16-bit SCSI Connector (5-row P2 Adapter)

Pin	Signal	Signal	Pin
1	GND	SDB12	35
2	GND	SDB13	36
3	GND	SDB14	37
4	GND	SDB15	38
5	GND	DBP1	39
6	GND	SDB0	40
7	GND	SDB1	41
8	GND	SDB2	42
9	GND	SDB3	43
10	GND	SDB4	44
11	GND	SDB5	45
12	GND	SDB6	46
13	GND	SDB7	47
14	GND	DBP0	48
15	GND	GND	49
16	GND	GND	50
17	TERMPWR	TERMPWR	51
18	TERMPWR	TERMPWR	52
19	No Connect	No Connect	53

Table 3-9: 16-bit SCSI Connector (5-row P2 Adapter)

Pin	Signal	Signal	Pin
20	GND	GND	54
21	GND	ATN	55
22	GND	GND	56
23	GND	BSY	57
24	GND	ACK	58
25	GND	RST	59
26	GND	MSG	60
27	GND	SEL	61
28	GND	D/C	62
29	GND	REQ	63
30	GND	O/I	64
31	GND	SDB8	65
32	GND	SDB9	66
33	GND	SDB10	67
34	GND	SDB11	68

PMC I/O (5-Row P2 Adapter - part # 01-W3199F01A))

The PMC I/O connector on the 5-row DIN backplane P2 Adapter is a 64-pin connector, J3. The pin assignments and signal mnemonics for this connector are listed in Table 3-10.

Table 3-10. PMC I/O Connector (5-Row P2 Adapter)

Pin	Signal	Signal	Pin
1	GND	GND	33
2	PMCIO0	PMCIO16	34
3	GND	GND	35
4	PMCIO1	PMCIO17	36
5	GND	GND	37
6	PMCIO2	PMCIO18	38
7	GND	GND	39
8	PMCIO3	PMCIO19	40
9	GND	GND	41
10	PMCIO4	PMCIO20	42
11	GND	GND	43
12	PMCIO5	PMCIO21	44
13	GND	GND	45
14	PMCIO6	PMCIO22	46
15	GND	GND	47
16	PMCIO7	PMCIO23	48
17	GND	GND	49
18	PMCIO8	PMCIO24	50
19	GND	GND	51
20	PMCIO9	PMCIO25	52
21	GND	GND	53

Table 3-10. PMC I/O Connector (5-Row P2 Adapter) (Continued)

Pin	Signal	Signal	Pin
22	PMCIO10	PMCIO26	54
23	GND	GND	55
24	PMCIO11	PMCIO27	56
25	GND	GND	57
26	PMCIO12	PMCIO28	58
27	GND	GND	59
28	PMCIO13	PMCIO29	60
29	GND	GND	61
30	PMCIO14	PMCIO30	62
31	GND	GND	63
32	PMCIO15	PMCIO31	64

Related Documentation A

Motorola Computer Group Documents

This product ships with an installation and use manual, which includes installation instructions, jumper configuration information, memory maps, debugger / monitor commands, and any other information needed to install and operate the board.

If you plan to develop your own applications or need more detailed information about this product, you may want to order one or more documents listed on the following pages. To order:

- Contact your local Motorola sales office,
- Access the World Wide Web site listed on the back cover of this and other MCG manuals and select “Product Literature”, or
- (USA and Canada only) —Contact the Literature Center via phone or fax at the numbers listed under *Product Literature* at MCG’s World Wide Web site

Any supplements issued for a specific revision of a manual or guide are furnished with that document. The “type” and “revision level” of a specific manual are indicated by the last three characters of the document number, such as “ / IH2” (the second revision of an installation manual); a supplement bears the same number as a manual but has two additional characters that indicate the revision level of the supplement, for example “ / IH2A1” (the first supplement to the second edition of the installation manual).

Table A-1. Motorola Computer Group Documents

Document Title	Publication Number
MVME3600/4600 Series VME Processor Module Installation and Use	V36V46A/IH
MVME3600/4600 Series VME Processor Module Programmer's Reference Guide	V3600A/PG
PPCBug Firmware Package User's Manual (Parts 1 and 2)	PPCBUGA1/UM PPCBUGA2/UM
PPC1Bug Diagnostics Manual	PPC1DIAA/UM
MVME712M Transition Module and P2 Adapter Board Installation and Use	VME712MA/IH
MVME761 Transition Module Installation and Use	VME761A/IH
PMCspan PMC Adapter Carrier Board Installation and Use	PMCSPANA/IH

Manufacturers' Documents

For additional information, refer to the following table for manufacturers' data sheets or user's manuals. As an additional help, a source for the listed document is also provided. Please note that in many cases, the information is preliminary and the revision levels of the documents are subject to change without notice.

To further assist your development effort, Motorola has collected some of the non-Motorola documents in this list from the suppliers.

Table A-2. Manufacturers' Documents

Document Title and Source	Publication Number
PowerPC 604^{TM} RISC Hardware Specification Literature Distribution Center for Motorola Telephone: (800) 441-2447 FAX: (602) 994-6430 or (303) 675-2150 E-mail: ldcformotorola@hibbertco.com	MPC604E9VEC/D (for 166-230MHz) MPC604E9QEC/D (for 266MHz & above)

Table A-2. Manufacturers' Documents (Continued)

Document Title and Source	Publication Number
PowerPC 604™ RISC Microprocessor User's Manual, and PowerPC604™ RISC Microprocessor User's Manual Addendum Literature Distribution Center for Motorola Telephone: (800) 441-2447 FAX: (602) 994-6430 or (303) 675-2150 E-mail: ldcformotorola@hibbertco.com OR IBM Microelectronics Mail Stop A25/862-1 PowerPC Marketing 1000 River Street Essex Junction, Vermont 05452-4299 Telephone: 1-800-PowerPC Telephone: 1-800-769-3772 FAX: 1-800-POWERfax FAX: 1-800-769-3732	MPC604UM/AD MPCFPE32B/AD MPR604UMU-01
PowerPC™ Microprocessor Family: The Programming Environments Literature Distribution Center for Motorola Telephone: (800) 441-2447 FAX: (602) 994-6430 or (303) 675-2150 E-mail: ldcformotorola@hibbertco.com OR IBM Microelectronics Mail Stop A25/862-1 PowerPC Marketing 1000 River Street Essex Junction, Vermont 05452-4299 Telephone: 1-800-PowerPC Telephone: 1-800-769-3772 FAX: 1-800-POWERfax FAX: 1-800-769-3732	MPCFPE/AD MPRPPCFPE-01
MPC2604GA Integrated Secondary Cache for PowerPC Microprocessors Data Sheets Literature Distribution Center for Motorola Telephone: (800) 441-2447 FAX: (602) 994-6430 or (303) 675-2150 E-mail: ldcformotorola@hibbertco.com	MPC2604GA

Table A-2. Manufacturers' Documents (Continued)

Document Title and Source	Publication Number
DECchip 21140 PCI Fast Ethernet LAN Controller Hardware Reference Manual Digital Equipment Corporation Maynard, Massachusetts DECchip Information Line Telephone (United States and Canada): 1-800-332-2717 TTY (United States only): 1-800-332-2515 Telephone (outside North America): +1-508-568-6868	EC-QC0CA-TE
PC87308VUL (Super I/O™ Enhanced Sidewinder Lite) Floppy Disk Controller, Keyboard Controller, Real-Time Clock, Dual UARTs, IEEE 1284 Parallel Port, and IDE Interface National Semiconductor Corporation Customer Support Center (or nearest Sales Office) 2900 Semiconductor Drive P.O. Box 58090 Santa Clara, California 95052-8090 Telephone: 1-800-272-9959	PC87308VUL
MK48T59/559 CMOS 8K x 8 TIMEKEEPER™ SRAM Data Sheet SGS-Thomson Microelectronics Group Marketing Headquarters (or nearest Sales Office) 1000 East Bell Road Phoenix, Arizona 85022 Telephone: (602) 867-6100	M48T59 and M48T559 respectively
SYM 53CXX (was NCR 53C8XX) Family PCI-SCSI I/O Processors Programming Guide Symbios Logic Inc. 1731 Technology Drive, Suite 600 San Jose, California 95110 Telephone: (408) 441-1080 Hotline: 1-800-334-5454	J10931I
SCC (Serial Communications Controller) User's Manual (for Z85230 and other Zilog parts) Zilog, Inc. 210 East Hacienda Ave., mail stop C1-0 Campbell, California 95008-6600 Telephone: (408) 370-8016 FAX: (408) 370-8056	DC-8293-02

Table A-2. Manufacturers' Documents (Continued)

Document Title and Source	Publication Number
Z8536 CIO Counter/Timer and Parallel I/O Unit Product Specification and User's Manual (in Z8000® Family of Products Data Book) Zilog, Inc. 210 East Hacienda Ave., mail stop C1-0 Campbell, California 95008-6600 Telephone: (408) 370-8016 FAX: (408) 370-8056	DC-8319-00
W83C553 Enhanced System I/O Controller with PCI Arbiter (PIB) Winbond Electronics Corporation Winbond Systems Laboratory 2730 Orchard Parkway San Jose, CA 95134 Telephone: 1-408-943-6666 FAX: 1-408-943-6668	W83C553
Universe User Manual Tundra Semiconductor Corporation 603 March Road Kanata, ON K2K 2M5, Canada Telephone: 1-800-267-7231 Telephone: (613) 592-1320 OR 695 High Glen Drive San Jose, California 95133, USA Telephone: (408) 258-3600 FAX: (408) 258-3659	Universe (Part Number 9000000.MD303.01)

Related Specifications

For additional information, refer to the following table for related specifications. As an additional help, a source for the listed document is also provided. Please note that in many cases, the information is preliminary and the revision levels of the documents are subject to change without notice.

Table A-3. Related Specifications

Document Title and Source	Publication Number
ANSI Small Computer System Interface-2 (SCSI-2), Draft Document Global Engineering Documents 15 Inverness Way East Englewood, CO 80112-5704 Telephone: 1-800-854-7179 Telephone: (303) 792-2181	X3.131.1990
VME64 Specification VITA (VMEbus International Trade Association) 7825 E. Gelding Drive, Suite 104 Scottsdale, Arizona 85260-3415 Telephone: (602) 951-8866 FAX: (602) 951-0720 **NOTE:** An earlier version of this specification is available as:	ANSI / VITA 1-1994
Versatile Backplane Bus: VMEbus Institute of Electrical and Electronics Engineers, Inc. Publication and Sales Department 345 East 47th Street New York, New York 10017-21633 Telephone: 1-800-678-4333	ANSI / IEEE Standard 1014-1987
OR	
Microprocessor system bus for 1 to 4 byte data Bureau Central de la Commission Electrotechnique Internationale 3, rue de Varembé Geneva, Switzerland	IEC 821 BUS

Table A-3. Related Specifications (Continued)

Document Title and Source	Publication Number
IEEE - Common Mezzanine Card Specification (CMC) Institute of Electrical and Electronics Engineers, Inc. Publication and Sales Department 345 East 47th Street New York, New York 10017-21633 Telephone: 1-800-678-4333	P1386 Draft 2.0
IEEE - PCI Mezzanine Card Specification (PMC) Institute of Electrical and Electronics Engineers, Inc. Publication and Sales Department 345 East 47th Street New York, New York 10017-21633 Telephone: 1-800-678-4333	P1386.1 Draft 2.0
Bidirectional Parallel Port Interface Specification Institute of Electrical and Electronics Engineers, Inc. Publication and Sales Department 345 East 47th Street New York, New York 10017-21633 Telephone: 1-800-678-4333	IEEE Standard 1284
Peripheral Component Interconnect (PCI) Local Bus Specification, Revision 2.1 PCI Special Interest Group 2575 NE Kathryn St. #17 Hillsboro, OR 97124 Telephone: (800) 433-5177 (inside the U.S.) or (503) 693-6232 (outside the U.S.) FAX: (503) 693-8344	PCI Local Bus Specification

Table A-3. Related Specifications (Continued)

Document Title and Source	Publication Number
PowerPC™ Microprocessor Common Hardware Reference Platform: A System Architecture (CHRP), Version 1.0 Literature Distribution Center for Motorola Telephone: (800) 441-2447 FAX: (602) 994-6430 or (303) 675-2150 E-mail: ldcformotorola@hibbertco.com OR APDA, Apple Computer, Inc. P.O. Box 319 Buffalo, NY 14207 Telephone: (800) 282-2732 FAX: (716) 871-6511 OR IBM 1580 Route 52, Bldg. 504 Hopewell Junction, NY 12533-6531 Telephone: (800) PowerPC OR Morgan Kaufmann Publishers, Inc. 340 Pine Street, Sixth Floor San Francisco, CA 94104-3205, USA Telephone: (415) 392-2665 FAX: (415) 982-2665	TB338/D MPRPPCHRP-01 ISBN 1-55860-394-8
PowerPC Reference Platform (PRP) Specification, Third Edition, Version 1.0, Volumes I and II International Business Machines Corporation Power Personal Systems Architecture 11400 Burnet Rd. Austin, TX 78758-3493 Document/Specification Ordering Telephone: 1-800-PowerPC Telephone: 1-800-769-3772 Telephone: 708-296-9332	MPR-PPC-RPU-02

Table A-3. Related Specifications (Continued)

Document Title and Source	Publication Number
IEEE Standard for Local Area Networks: Carrier Sense Multiple Access with Collision Detection (CSMA/CD) Access Method and Physical Layer Specifications Institute of Electrical and Electronics Engineers, Inc. Publication and Sales Department 345 East 47th Street New York, New York 10017-21633 Telephone: 1-800-678-4333	IEEE 802.3
Information Technology - Local and Metropolitan Networks - Part 3: Carrier Sense Multiple Access with Collision Detection (CSMA/CD) Access Method and Physical Layer Specifications Global Engineering Documents 15 Inverness Way East Englewood, CO 80112-5704 Telephone: 1-800-854-7179 Telephone: (303) 792-2181 *(This document can also be obtained through the national standards body of member countries.)*	ISO/IEC 8802-3
Interface Between Data Terminal Equipment and Data Circuit-Terminating Equipment Employing Serial Binary Data Interchange (EIA-232-D) Electronic Industries Association Engineering Department 2001 Eye Street, N.W. Washington, D.C. 20006	ANSI/EIA-232-D Standard

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